IN THE CLAIMS

Please add new claims 61-68 as follows:

1. (ORIGINAL) A system for uplinking signals, comprising:

a first receiver for receiving a first feeder link signal using a first feeder link spot beam antenna for a first satellite transponder, the first satellite transponder transmitting an upper layer signal of a layered modulation signal to at least one receiver;

a second receiver for receiving a second feeder link signal using a second feeder link spot beam antenna for a second satellite transponder, the second satellite transponder transmitting a lower layer signal of the layered modulation signal to the at least one receiver;

wherein the first feeder link spot beam antenna transmits from a first coverage area and the second feeder link spot beam antenna transmits from a second coverage area distinct from the first coverage area and the second feeder link signal reuses a frequency spectrum of the first feeder link signal.

2. (ORIGINAL)The system of claim 1, wherein a first frequency bandwidth of the upper layer signal partially overlaps a second frequency bandwidth of the lower layer signal.

3. (ORIGINAL) The system of claim 1, wherein a first frequency bandwidth of the upper layer signal completely overlaps a second frequency bandwidth of the lower layer signal.

4. (ORIGINAL) The system of claim 1, wherein the upper layer signal comprises a legacy signal.

5. (ORIGINAL) The system of claim 1, wherein the first transponder and the second transponder are both on a common satellite.

6. (ORIGINAL) The system of claim 1, wherein the first transponder and the second transponder are each on a different satellite.

7. (ORIGINAL) The system of claim 1, wherein the first transponder and the second transponder include amplifiers operable substantially at saturation.

8. (ORIGINAL) The system of claim 1, wherein the first satellite transponder for the upper layer signal includes a power combiner.

9. (ORIGINAL) The system of claim 1, wherein at least one of the first feeder link signal and the second feeder link signal are power level adjusted to maintain a relative power level between the upper layer signal and the lower layer signal for reception.

10. (ORIGINAL) A method of uplinking signals, comprising:

receiving a first feeder link signal using a first feeder link spot beam antenna for a first satellite transponder, the first satellite transponder transmitting an upper layer signal of a layered modulation signal to at least one receiver;

receiving a second feeder link signal using a second feeder link spot beam antenna for a second satellite transponder, the second satellite transponder transmitting a lower layer signal of the layered modulation signal to the at least one receiver;

wherein the first feeder link spot beam antenna transmits from a first coverage area and the second feeder link spot beam antenna transmits from a second coverage area distinct from the first coverage area and the second feeder link signal reuses a frequency spectrum of the first feeder link signal.

11. (ORIGINAL) The method of claim 10, wherein a first frequency bandwidth of the upper layer signal partially overlaps a second frequency bandwidth of the lower layer signal.

12. (ORIGINAL) The method of claim 10, wherein a first frequency bandwidth of the upper layer signal completely overlaps a second frequency bandwidth of the lower layer signal.

13. (ORIGINAL) The method of claim 10, wherein the upper layer signal comprises a legacy signal.

14. (ORIGINAL) The method of claim 10, wherein the first transponder and the second transponder are both on a common satellite.

15. (ORIGINAL) The method of claim 10, wherein the first transponder and the second transponder are each on a different satellite.

16. (ORIGINAL) The method of claim 10, wherein the first satellite transponder and the second satellite transponder include amplifiers operable substantially at saturation.

17. (ORIGINAL) The method of claim 10, wherein the first satellite transponder for the upper layer signal includes a power combiner.

18. (ORIGINAL) The method of claim 10, wherein at least one of the first feeder link signal and the second feeder link signal are power level adjusted to maintain a relative power level between the upper layer signal and the lower layer signal for reception.

19. (ORIGINAL) A system for uplinking signals, comprising:

a first receiver for receiving a first feeder link signal for a first satellite transponder on a first satellite, the first satellite transponder transmitting an upper layer signal of a layered modulation signal to at least one receiver;

a second receiver for receiving a second feeder link signal for a second satellite transponder on a second satellite, the second satellite transponder transmitting a lower layer signal of the layered modulation signal to the at least one receiver;

wherein the second feeder link signal reuses a frequency band of the first feeder link signal and the first satellite and the second satellite have an orbital separation sufficient to allow reuse of the frequency band.

20. (ORIGINAL) The system of claim 19, wherein a first frequency bandwidth of the upper layer signal partially overlaps a second frequency bandwidth of the lower layer signal.

21. (ORIGINAL) The system of claim 19, wherein a first frequency bandwidth of the upper layer signal completely overlaps a second frequency bandwidth of the lower layer signal.

22. (ORIGINAL) The system of claim 19, wherein the upper layer signal comprises a legacy signal.

23. (ORIGINAL) The system of claim 19, wherein the first satellite transponder for the upper layer signal includes a power combiner.

24. (ORIGINAL) The system of claim 19, wherein at least one of the first feeder link signal and the second feeder link signal are power level adjusted to maintain a relative power level between the upper layer signal and the lower layer signal for reception.

25. (ORIGINAL) A method of uplinking signals, comprising:

receiving a first feeder link signal for a first satellite transponder on a first satellite, the first satellite transponder transmitting an upper layer signal of a layered modulation signal to at least one receiver;

receiving a second feeder link signal for a second satellite transponder on a second satellite, the second satellite transponder transmitting a lower layer signal of the layered modulation signal to the at least one receiver;

wherein the second feeder link signal reuses a frequency band of the first feeder link signal and the first satellite and the second satellite have an orbital separation sufficient to allow reuse of the frequency band.

26. (ORIGINAL) The method of claim 25, wherein a first frequency bandwidth of the upper layer signal partially overlaps a second frequency bandwidth of the lower layer signal.

27. (ORIGINAL) The method of claim 25, wherein a first frequency bandwidth of the upper layer signal completely overlaps a second frequency bandwidth of the lower layer signal.

28. (ORIGINAL) The method of claim 25, wherein the upper layer signal comprises a legacy signal.

29. (ORIGINAL) The method of claim 25, wherein the first satellite transponder for the upper layer signal includes a power combiner.

30. (ORIGINAL) The method of claim 25, wherein at least one of the first feeder link signal and the second feeder link signal are power level adjusted to maintain a relative power level between the upper layer signal and the lower layer signal for reception.

31. (ORIGINAL) A system for uplinking signals, comprising:

a layered modulation receiver/demodulator for receiving and demodulating an upper layer feeder link signal and a lower layer feeder link signal both from a layered modulation feeder link signal;

a first modulator for modulating the upper layer feeder link signal to produce an upper layer signal of a layered modulation downlink signal to at least one receiver; and

a second modulator for modulating the lower layer feeder link signal to produce a lower layer signal of the layered modulation downlink signal to the at least one receiver.

32. (ORIGINAL) The system of claim 31, wherein the upper layer feeder link signal and the lower layer feed link signal are transmitted from a common location.

33. (ORIGINAL) The system of claim 31, wherein the upper layer feeder link signal and the lower layer feed link signal are each transmitted from a different location.

34. (ORIGINAL) The system of claim 31, wherein a first frequency bandwidth of the upper layer downlink signal partially overlaps a second frequency bandwidth of the lower layer downlink signal.

35. (ORIGINAL) The system of claim 31, wherein a first frequency bandwidth of the upper layer downlink signal completely overlaps a second frequency bandwidth of the lower layer downlink signal.

36. (ORIGINAL) The system of claim 31, wherein the upper layer feeder link signal and the lower layer feeder link signal are coherently transmitted to the layered modulation receiver/demodulator.

37. (ORIGINAL) The system of claim 31, wherein the upper layer feeder link signal and the lower layer feeder link signal are non-coherently transmitted to the layered modulation receiver/demodulator.

38. (ORIGINAL) The system of claim 31, wherein the upper layer downlink amplifier includes a power combiner.

39. (ORIGINAL) The system of claim 31, wherein at least one of the upper layer feeder link signal and the lower layer feeder link signal are power level adjusted to maintain a relative power level between the upper layer signal and the lower layer signal for reception.

40. (ORIGINAL) A method of uplinking signals, comprising:

receiving a layered modulation feeder link signal, the layered modulation feeder link signal comprising an upper layer feeder link signal and a lower layer feeder link signal;

demodulating the upper layer feeder link signal from the layered modulation feeder link signal;

demodulating the lower layer feeder link signal from the layered modulation feeder link signal;

modulating the upper layer feeder link signal for transmitting an upper layer downlink signal of a layered modulation downlink signal to at least one receiver; and

modulating the second feeder link signal for transmitting a lower layer downlink signal of the layered modulation downlink signal to the at least one receiver.

41. (ORIGINAL) The method of claim 40, wherein the upper layer feeder link signal and the lower layer feed link signal are transmitted from a common location.

42. (ORIGINAL) The method of claim 40, wherein the upper layer feeder link signal and the lower layer feed link signal are each transmitted from a different location.

43. (ORIGINAL) The method of claim 40, wherein a first frequency bandwidth of the upper layer downlink signal partially overlaps a second frequency bandwidth of the lower layer downlink signal.

44. (ORIGINAL) The method of claim 40, wherein a first frequency bandwidth of the upper layer downlink signal completely overlaps a second frequency bandwidth of the lower layer downlink signal.

45. (ORIGINAL) The method of claim 40, wherein the upper layer feeder link signal and the lower layer feeder link signal are coherently transmitted to the layered modulation receiver/demodulator.

46. (ORIGINAL) The method of claim 40, wherein the upper layer feeder link signal and the lower layer feeder link signal are non-coherently transmitted to the layered modulation receiver/demodulator.

47. (ORIGINAL) The method of claim 40, wherein the upper layer downlink amplifier includes a power combiner.

48. (ORIGINAL) The method of claim 40, wherein at least one of the upper layer feeder link signal and the lower layer feeder link signal are power level adjusted to maintain a relative power level between the upper layer signal and the lower layer signal for reception.

49. (ORIGINAL) A system for uplinking signals, comprising:

a higher order receiver/demodulator for receiving and demodulating a feeder link signal into a first bit stream;

a demultiplexer for demultiplexing the first bit stream into a second bit stream and a third bit stream;

a first lower order modulator for modulating the second bit stream into an upper layer signal of a layered modulation signal for transmission to at least one receiver;

a second lower order modulator for modulating the third bit stream into a lower layer signal of the layered modulation signal for transmission to the at least one receiver;

wherein the feeder link signal comprises a higher order modulation than a lower order modulation of the upper layer signal and the lower layer signal such that a feeder link frequency

band of the feeder link signal is no greater than a downlink frequency band of the upper layer signal and the lower layer signal.

50. (ORIGINAL) The system of claim 49, wherein a first frequency bandwidth of the upper layer signal partially overlaps a second frequency bandwidth of the lower layer signal.

51. (ORIGINAL) The system of claim 49, wherein a first frequency bandwidth of the upper layer signal completely overlaps a second frequency bandwidth of the lower layer signal.

52. (ORIGINAL) The system of claim 49, wherein the higher order synchronous modulation comprises 16QAM and the lower order modulation comprises QPSK.

53. (ORIGINAL) The system of claim 49, wherein the amplifier system for the upper layer downlink signal includes a power combiner.

54. (ORIGINAL) The system of claim 49, wherein at least one of the upper layer feeder link signal and the lower layer feeder link signal are power level adjusted to maintain a relative power level between the upper layer signal and the lower layer signal for reception.

55. (ORIGINAL) A method of uplinking signals, comprising:

receiving and demodulating a feeder link signal into a first bit stream;

demultiplexing the first bit stream into a second bit stream and a third bit stream;

modulating the second bit stream into an upper layer signal of a layered modulation signal for transmission to at least one receiver;

modulating the third bit stream into a lower layer signal of the layered modulation signal for transmission to the at least one receiver;

wherein the feeder link signal comprises a higher order modulation than a lower order modulation of the upper layer signal and the lower layer signal such that a feeder link frequency band of the feeder link signal is no greater than a downlink frequency band of the upper layer signal and the lower layer signal.

56. (ORIGINAL) The method of claim 55, wherein a first frequency bandwidth of the upper layer signal partially overlaps a second frequency bandwidth of the lower layer signal.

57. (ORIGINAL) The method of claim 55, wherein a first frequency bandwidth of the upper layer signal completely overlaps a second frequency bandwidth of the lower layer signal.

58. (ORIGINAL) The method of claim 55, wherein the higher order synchronous modulation comprises 16QAM and the lower order modulation comprises QPSK.

59. (ORIGINAL) The method of claim 55, wherein the amplifier system for the upper layer downlink signal includes a power combiner.

60. (ORIGINAL) The method of claim 55, wherein at least one of the first feeder link signal and the second feeder link signal are power level adjusted to control a relative power level between the upper layer signal and the lower layer signal.

61. (NEW) The system of claim 1, wherein the upper layer signal and the lower layer signal are non-coherent.

62. (NEW) The method of claim 10, wherein the upper layer signal and the lower layer signal are non-coherent.

63. (NEW) The system of claim 19, wherein the upper layer signal and the lower layer signal are non-coherent.

64. (NEW) The method of claim 25, wherein the upper layer signal and the lower layer signal are non-coherent.

65. (NEW) The system of claim 31, wherein the upper layer signal and the lower layer signal are non-coherent.

66. (NEW) The method of claim 40, wherein the upper layer signal and the lower layer signal are non-coherent.

67. (NEW) The system of claim 49, wherein the upper layer signal and the lower layer signal are non-coherent.

68. (NEW) The method of claim 55, wherein the upper layer signal and the lower layer signal are non-coherent.